

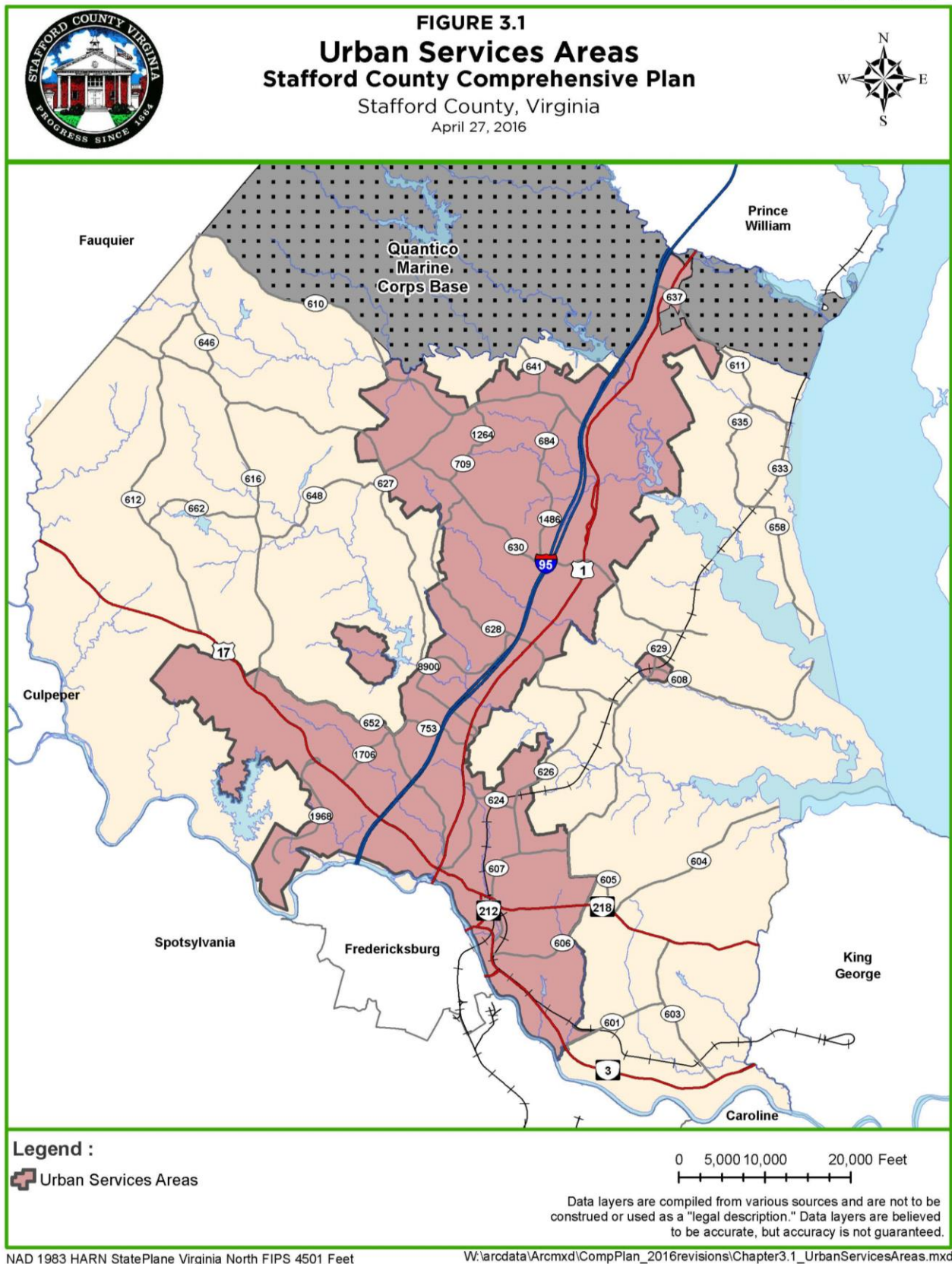
3.0 The Land Use Plan

3.1 Overview

The Land Use Plan for Stafford County is a key element of the Comprehensive Plan, guiding the physical form of the County by directing the location, type, and intensity of land uses. The Plan has been developed after taking into account factors such as existing development patterns and conditions, the potential for existing land use regulations to accommodate projected growth, and opportunities and constraints.

The key points of the Plan are:

- The Land Uses within the Urban Services Area (USA) have been generalized as Planning Areas, Suburban areas, and Business and Industry areas.
- The USA boundary has been designated to promote infill development to access public water and sewer in the established suburban and industrial areas. The majority of future residential and commercial development is being recommended along the I-95 and U.S. Route 1 corridors.
- Key Planning Areas are identified with one land use designation for areas that include Targeted Growth Areas and/or Economic Development Priority Focus Areas, including Redevelopment Areas, in an effort to simplify overlapping planning recommendations.
- Establishes five (5) Targeted Growth Areas (with a mix of residential and commercial land uses) located in the vicinity of primary road networks, transportation hubs, and along the rail corridor to maximize the use of public transportation.
- Business and Industrial land uses are encouraged around established and developing business areas.
- Lot sizes in agricultural and rural areas outside of the USA should be at least three (3) acres in size except where significant farming and forest lands can be incorporate into cluster developments.



3.2 Basis for the Plan

The Land Use Plan has been developed on the premise that much of the projected 20 years of future growth can occur within the previously established Urban Services Area with minimal expansion, given the amount of available vacant and underutilized land and previously approved but unbuilt projects. Promoting development on infill parcels or other parcels in close proximity to existing development will maximize the efficiency of existing infrastructure and services.

3.3 Key Features of the Plan

3.3.1. Growth Management and Urban Services Area

The Plan recognizes the need to direct growth into the Urban Services Area and discourage growth in the agricultural areas. This is accomplished, in part, by establishing the location of public water and sewer facilities. The location of the Urban Services Area generally dictates what land areas may be served by public water and sewer lines.

Within the Urban Services Area, newly constructed houses and buildings will be required to connect to the public water supply and the public sewer system.

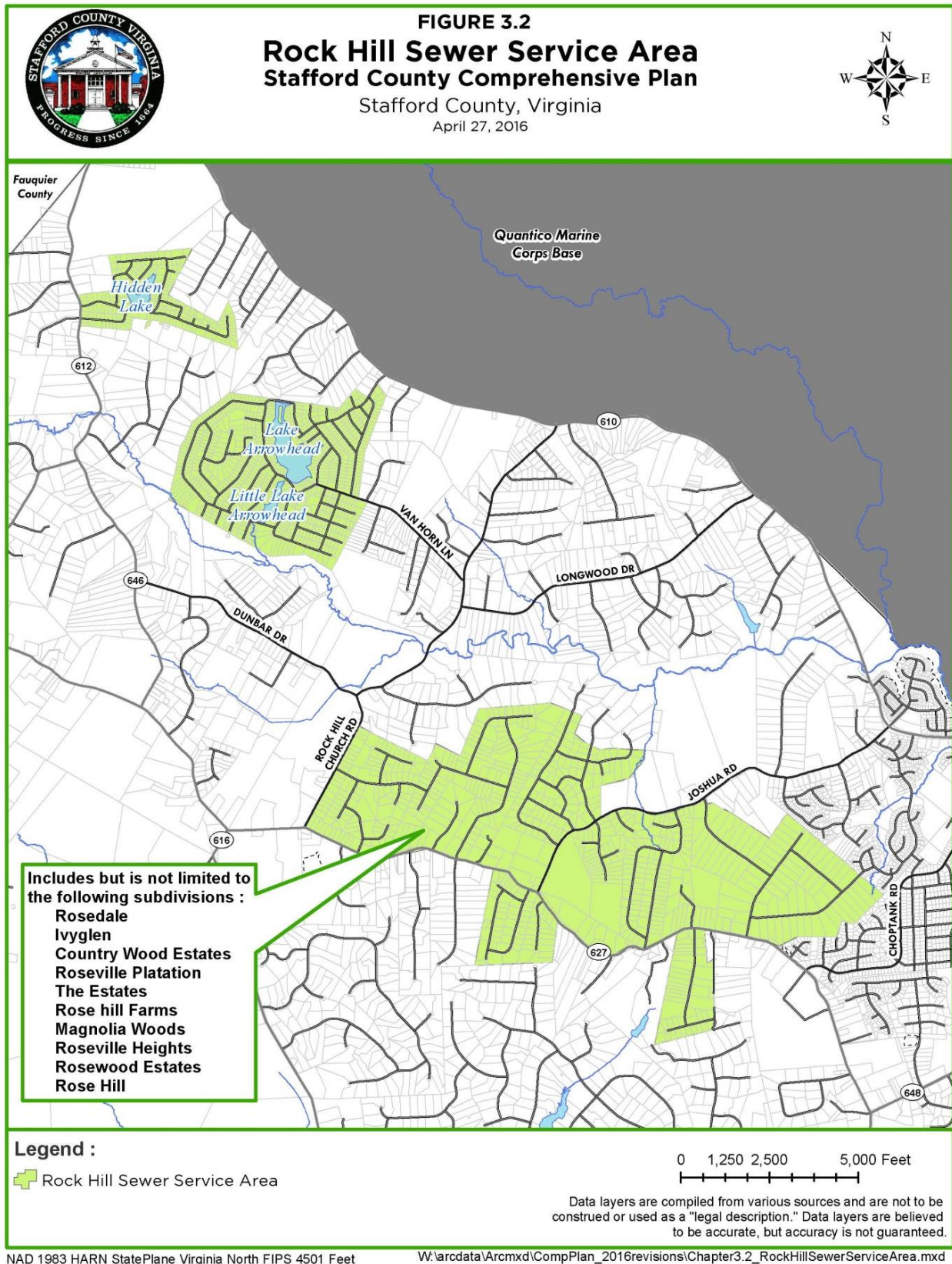
In several situations, existing or previously approved water and sewer lines may be located outside of the designated Urban Services Area. In these situations, the lines will be maintained in these locations, but new extensions of public sewer will be allowed only to serve areas of actual or impending drainfield failures and extensions of public water will be allowed only to improve water quality by looping existing water lines.

LIMITED WATER AND SEWER UTILITY AREAS

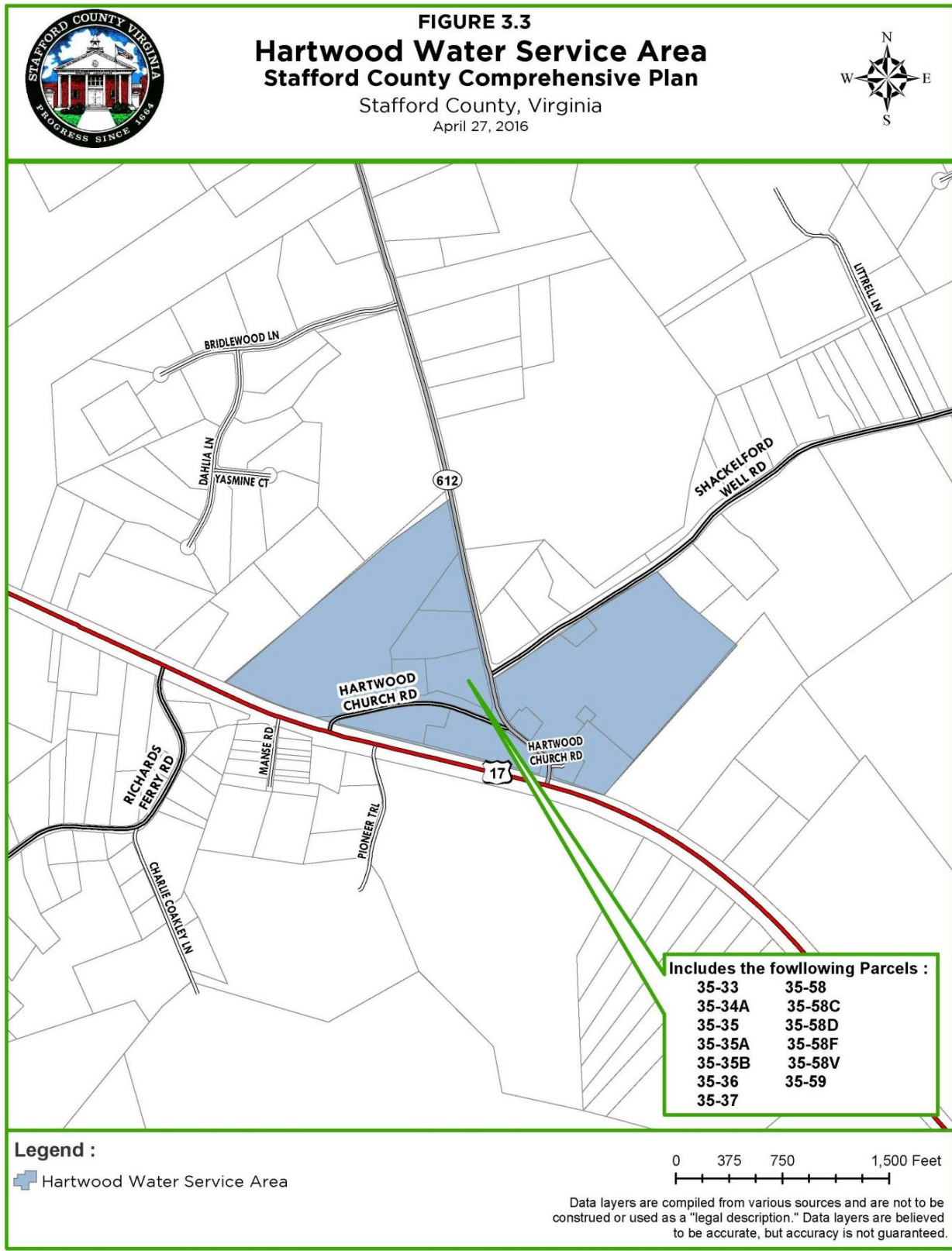
Rock Hill Sewer Service Area – this area includes several rural residential communities in the northwest corner of the County. The area, identified in Figure 3.2, is primarily built out and is characteristic of older rural residential neighborhoods with 1 to 3 acre lots that utilize private wells and septic drainfields. Drainfield failures have occurred on several properties in this area. The purpose of this service area is to provide future sewer service to the existing residents and protect public health. The area includes, but is not limited to, the following subdivisions: Hidden Lake, Lake Arrowhead, Country Wood Estates, The Estates, Ivyglen, Rosedale, Roseville Plantation, Rose Hill Farm, Roseville Heights, and Rosewood Estates. The area is not intended for future higher intensity development.

Hartwood Water Service Area – this area is in the vicinity of the intersection of Warrenton Road and Hartwood Road, and includes Hartwood Elementary School and Hartwood Volunteer Fire Department. These facilities utilize well water. A future need is anticipated for water service upgrades in this area, specifically to Hartwood Elementary School. It is the intent of this area to be served by a future connection to the public waterline network. It is not the intent of this plan to promote higher intensity land uses in this service area. The geographic extent of this area is identified in Figure 3.3.

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3.3.2. Planning Areas

In an effort to simplify overlapping planning recommendations, Planning Areas are a new future land use designation that provide a single designation for areas that include Targeted Growth Areas (TGAs) and/or Economic Development Priority Focus Areas (PFAs), including Redevelopment Areas (RDAs). The purpose for this designation is to highlight the locations where a significant amount of new development and redevelopment (both commercial and residential) is expected to occur. This is where much of the County's infrastructure and other public facility planning should be focused. Targeted Growth Areas emphasize where approximately 50 percent of the County's residential growth is recommended (and recommended to be mixed with commercial land uses). Economic Development Priority Focus Areas, including Redevelopment Areas, emphasize where business development is encouraged. Several TGAs and PFAs overlap further identifying their importance to the County's future growth pattern.

TARGETED GROWTH AREAS

The Plan establishes five (5) Targeted Growth Areas in the County in the general locations of previously designated Urban Development Areas. The exact boundaries, number and development parameters for the Targeted Growth Areas are shown on the future Land Use Map (Figure 3.6) and are further described in Section 3.6 of this chapter.

REDEVELOPMENT AREAS

The Plan identifies the locations of four Redevelopment Areas. These are areas that the County has identified in its 2006 Economic Development Strategic Plan as prime locations for redevelopment. These areas include Boswell's Corner, the Courthouse Area, Falmouth Village, and Southern Gateway, along Warrenton Road, west of Interstate 95.

Redevelopment efforts were initiated in the Fall of 2006. Public workshops were conducted and plans were developed by a consultant retained by the County to conduct the work. These efforts produced Redevelopment Area Master Plans for each location, providing detailed assessments and analysis of the areas and detailed action plans. These Area Plans have been incorporated as elements of the Comprehensive Plan. These Area Plans provide the basis for evaluating land use proposals.

The Redevelopment Areas are located within the Planning Area land use designation. Summaries of these Plans are included in their respective Planning Area in Chapter 3.6 of this document.

INTERIM IMPLEMENTATION STRATEGY AND REVIEW STANDARDS:

Stafford County's historic development pattern has been of a low-rise suburban scale. In the recent past, individual development projects have approached mid-rise scale and form. Therefore, an interim strategy for review and approval of development projects within the Redevelopment Areas is outlined below to facilitate implementation of the recommendations contained within the Redevelopment Plans, but within a context of historical development patterns and current market dynamics. Until such time as adequate public infrastructure is in place to establish the core framework needed to realize the redevelopment visions, all rezoning or conditional use permit development proposals will be reviewed to determine if they meet the following standards for development during the interim phase:

- the development proposal either constructs or makes accommodation for planned infrastructure identified in the Redevelopment Plans.
- the development proposal includes parcels that are subdivided in a manner to accommodate the creation of blocks and the potential consolidation of properties as recommended by the Plans.
- architectural design themes contained in the development proposal will not conflict with those suggested in the Redevelopment Plans. Franchise architecture should be modified to meet Redevelopment Plans' visions.
- the development proposal is cognizant of the need for public and private open spaces that benefit private properties as well as the public.
- the development proposal uses street furniture and other pedestrian features as recommended by the Redevelopment Plans.
- the location, placement, and design of signs included in the development proposal are done in such a manner as to not detract from building architecture.

Additionally, as development codes are reviewed and modified to ensure there are limited regulatory impediments to implementing the Redevelopment Plans, incentives for by-right developments to incorporate architectural and design recommendations of the redevelopment plans will be considered.



Stafford Courthouse Redevelopment Area
Courtesy of Cunningham + Quill Architects

3.4 Military Facility Impacts

Marine Corps Base Quantico encompasses 33,000 acres (19%) of land area within the boundaries of Stafford County. This section of the Plan identifies areas in the County outside of the Base that may be impacted by military activities. Military activities on Quantico include realistic air and ground combat exercises and explosive ordnance demolition training. This training occurs on ranges located to the west of Interstate 95 near the Garrisonville Road corridor. Aircraft maneuvers that occur as part of this training extend off base into airspace over the Rock Hill and Hartwood Areas of the County. Noise impacts associated with both the ordnance demolition and aircraft extend well into the North Stafford, Hartwood, and Widewater areas of the County.

Joint Land Use Study (JLUS)

The MCB Quantico Joint Land Use Study (JLUS), completed in 2014, was a cooperative land use planning initiative between the Marine Corps, Stafford County, Prince William County, and Fauquier County, as well as others responsible for planning, development and communications in the region. The document serves as an on-going framework for those local governments and military actions necessary to encourage compatible growth around MCB Quantico and improve the quality of life in the surrounding communities.

A key result of the JLUS was development of a Military Influence Area Analysis. Due to the size and complexity of land uses on MCB Quantico, the degree to which activities on base affect the adjacent communities varies significantly from one location to another. Therefore, a Military Influence Area (MIA) was developed that is jurisdiction-specific and includes the land uses off base that could reasonably affect, or be affected by, military operations on base. This influence area is shown in Figure 3.4a and includes a number of mapped features, such as noise contours, buffer areas from the ranges, aviation safety zones, and a 3,000 foot notification boundary around the base established by state law. The MIA is further divided into subzones which are appropriate for specific recommendations based on the degree of potential impact experienced from base operations and, conversely, the degree potential land use changes within these areas could affect base operations. The MIA zones specific to Stafford County are depicted in Figure 3.4b. The location of noise contours that factor into determining the influence areas are included in figure 3.4c.

MIA Zones

MIA Zone 2 captures the portion of Stafford County within the 3,000-foot notification boundary and the three-mile range buffer. Zone 2 is subdivided primarily based on county policy, including the designated urban service area and county growth and redevelopment areas. Zone 2.1 includes the portion of eastern Stafford County directly south of MCB Quantico Main Side and within the 3,000-foot notification boundary. Land uses on base consist of training areas, while the adjacent portion of the county is largely forested with some low density residential. The area is outside the designated urban service area. Zone 2.2, bounded by Zone 2.1 to the east and I-95 to the west, contains the Route 1 corridor, including the Boswell's Corner designated growth area. Most of Zone 2.2 is within the three-mile range buffer and therefore subject to the potential for noise impacts due to MCB Quantico training and range operations. Zone 2.3 includes the portion of the county west of I-95 and within the urban service area, including the Garrisonville Road corridor. The outer edge of the area is formed by the three-mile range buffer. Zone 2.4 includes the western portion of the county within the three-mile range buffer and

outside the urban service area. This zone is more rural in nature than areas to the east, with lower density residential uses.

Zone 6.1 represents the portion of the approach-departure to MCAF falling outside the 3,000-foot notification boundary, and is split between Prince William County to the north and Stafford County to the south. In Stafford County, the zone is located along the Potomac River shoreline in the Widewater area, which is currently forested open space. This area has been subject to proposals for residential development which are undergoing review. Zone 6.2 represents the MCB Quantico MOA including the portion of the MOA outside of the five-mile range buffer in portions of Fauquier, Stafford, and Culpeper Counties. The focus of this zone is on airspace restrictions and coordination.

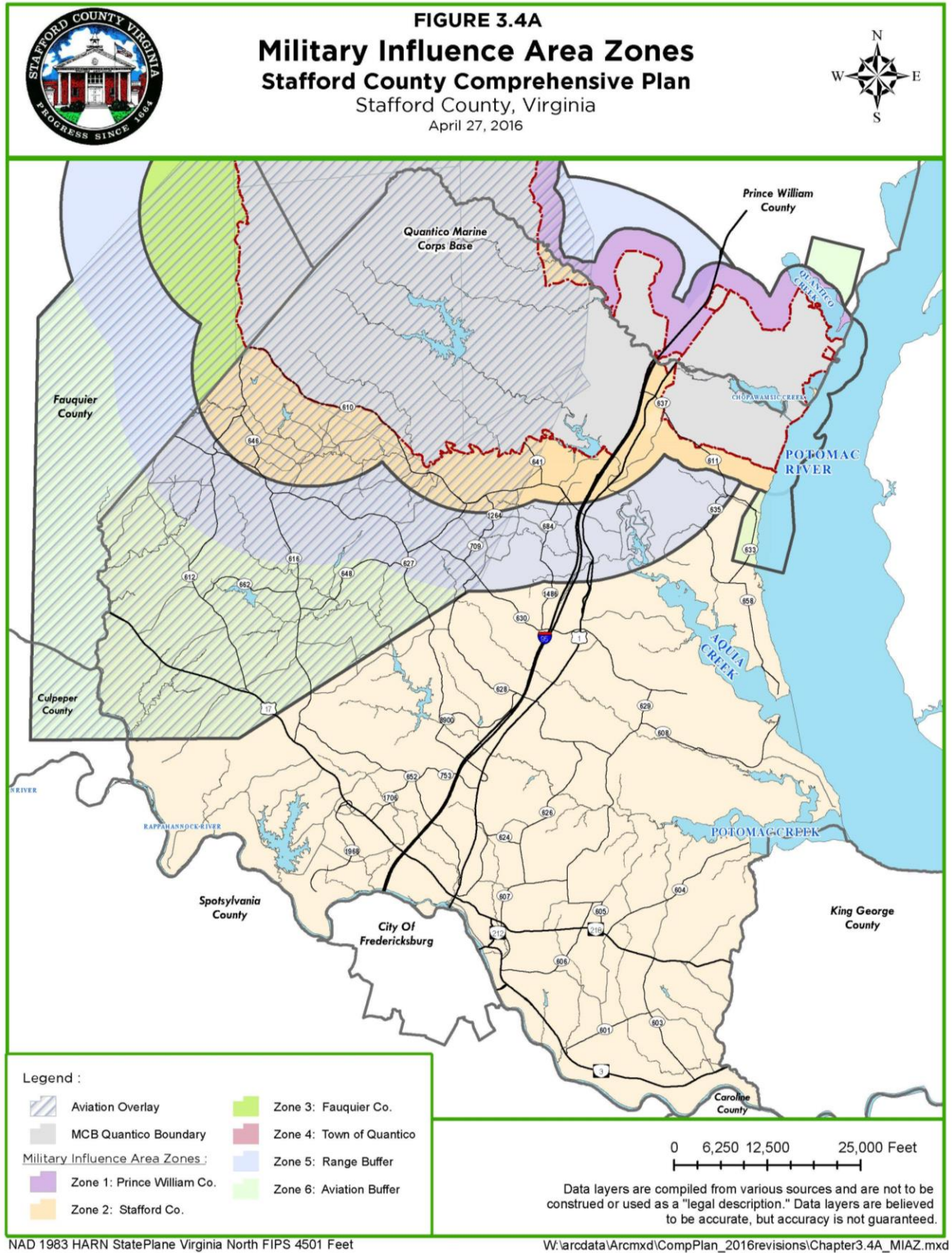
Land Use Compatibility

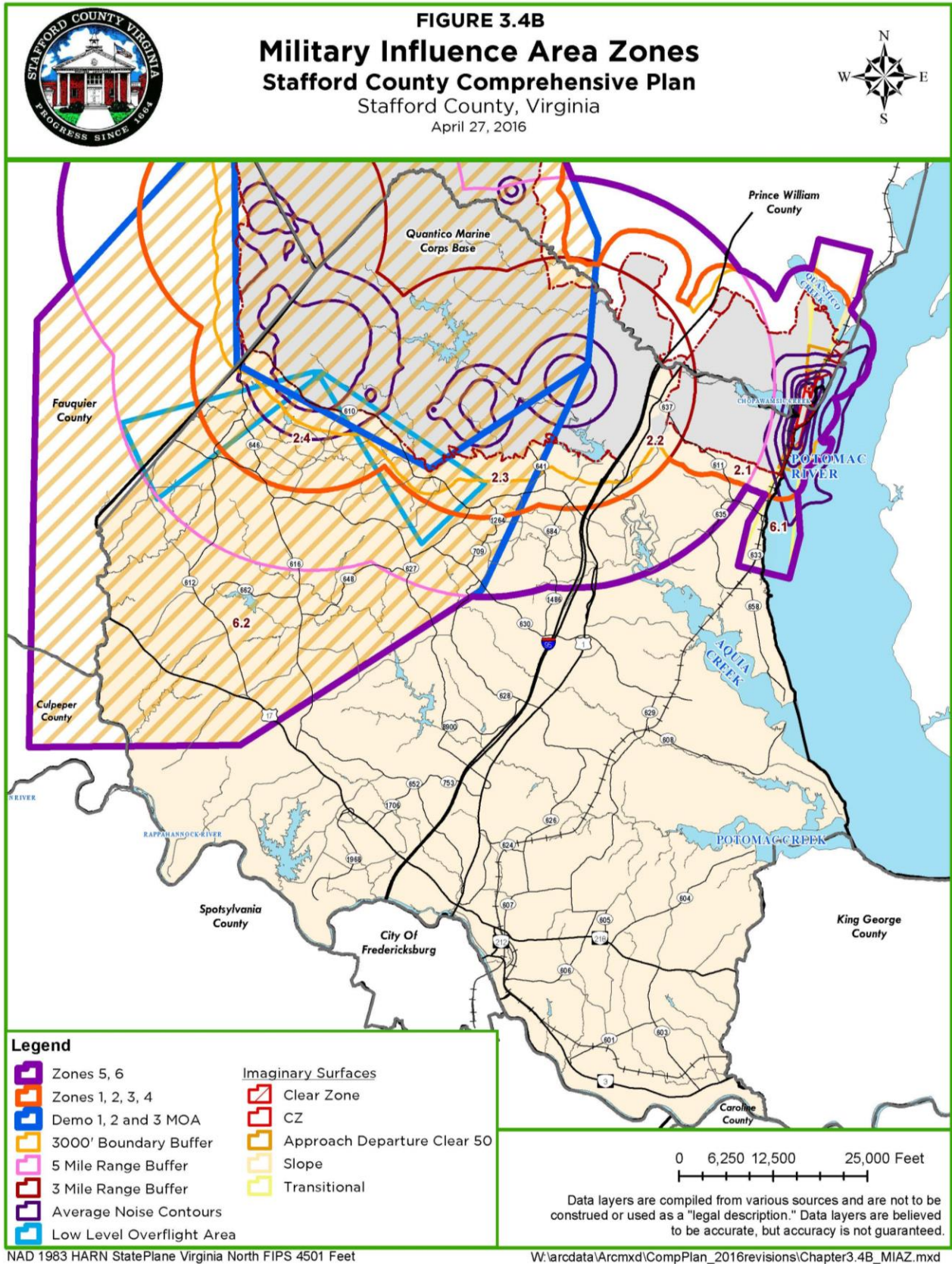
U. S Department of Defense instruction provides guidelines for compatibility within designated operational noise zones. In order to consider a more holistic compatibility analysis, factors in addition to average noise contours were considered in this JLUS, including peak/impulse noise propagation, night training activities, airspace requirements, and legislative notification boundaries adjacent to MCB Quantico. Each of the MIA zones were analyzed for the potential to experience impacts due to military operations, as well as the potential to adversely affect military missions now or in the future based on local land uses and planning policies. To analyze land use compatibility, a detailed review of potential land uses was conducted for the MIA zones closest to the base. Again, the degree of compatibility varies widely by zone depending on proximity to the MCB Quantico ranges and other training operations. The JLUS summarizes the land uses within each zone that experience impact from the current MCB Quantico training operations or can negatively impact this training. Generally, the land uses that experience the greatest degree of impact are noise sensitive land uses located in proximity to the ordnance ranges, such as high density residential, hospitals, day care and nursing facilities, religious buildings, schools, outdoor amphitheaters and other similar uses. Land uses that are incompatible because they can potentially affect night training operations include some commercial uses, sports fields and arenas, amusement parks and other uses with significant outdoor night lighting. Cell towers and other tall objects are also not compatible near certain parts of the base since they can interfere with helicopter and other low-flying aircraft used for training purposes. The most compatible uses generally include low density residential, agriculture, forestry and park lands with limited development. There are other uses that fall in between that can be affected by the base or vice-versa, but the degree of this impact can be mitigated through real estate disclosure, sound attenuation, lighting controls and other measures incorporated in the project design or construction. Table 3.1 shows the compatible land uses by MIA zone.

The study concluded with jointly developed recommendations to address compatibility issues. A number of these are specific to the individual zones included in the MIA, while others are more policy oriented and affect the entire region. These recommendations are strategies for enhancing the relationship between MCB Quantico and the surrounding JLUS communities over time. The recommendations, as well as implementation strategies are described in detail in the JLUS document, but generally fall into eight different categories as follows:

- Coordination
- Communication
- Military Operations

- Transportation Systems
- Utility/ Municipal Services
- Virginia Legislative Initiatives
- Community Development/Planning
- Environmental/Conservation/Open Space





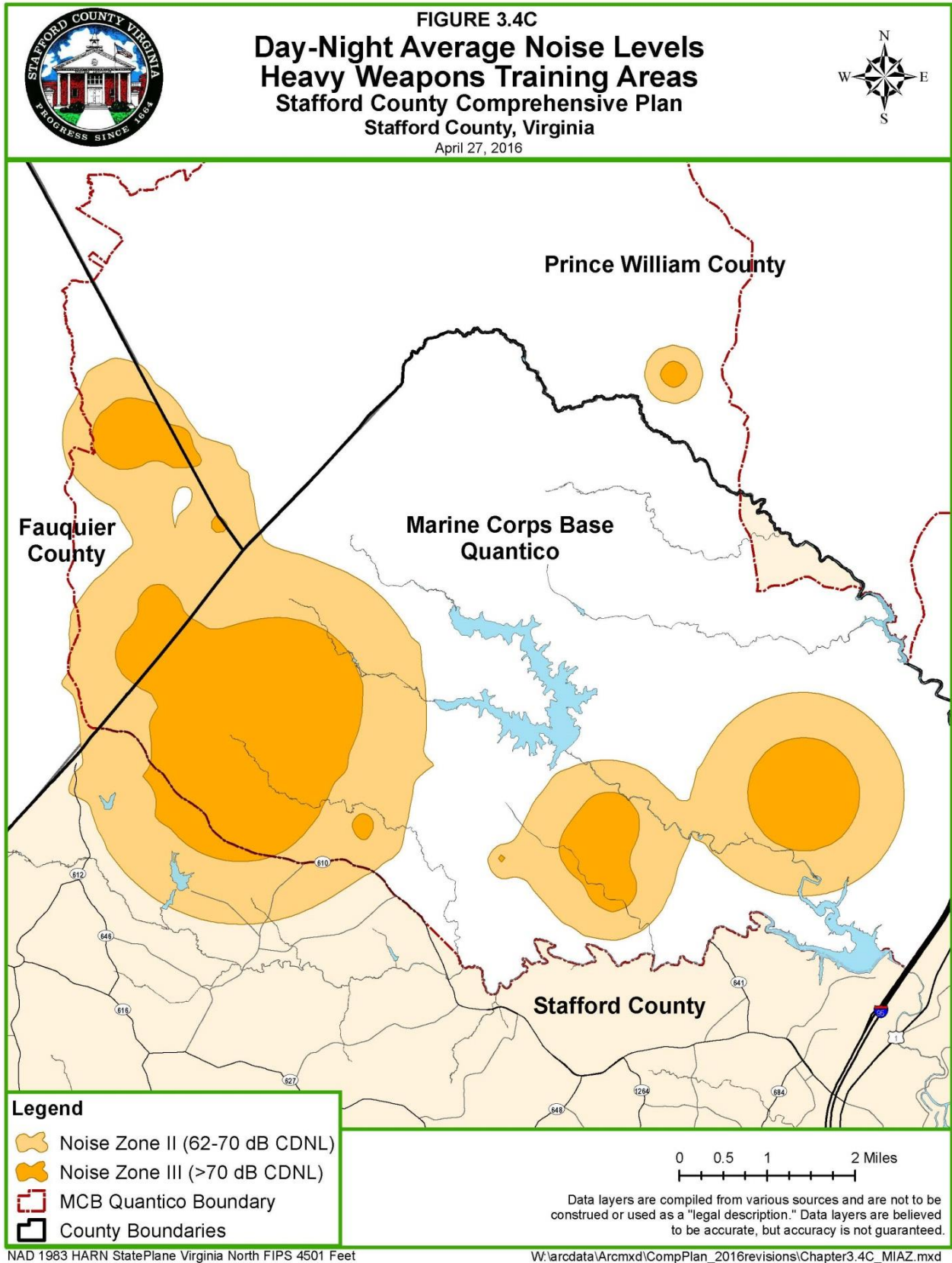


Table 3.1 Military Influence Area Suggested Land Use Compatibility

MIA Zone	Low Impact	Moderate Impact*	High Impact
1.1	Residential Commercial Industrial Religious Assembly Parks / Recreation Municipal Services Hospitals / Assisted Living / Day Care Farming / Forestry / Resource Preservation	Outdoor Amphitheaters/ Sports Arenas Amusement Parks Cell Towers	
1.2	Parks / Passive Recreation Farming / Forestry / Resource Preservation	Parks / Active Recreation Amphitheaters/ Sports Arenas Amusement Parks Cell Towers	Residential Commercial Industrial Religious Assembly Municipal Services Hospitals / Assisted Living / Day Care
1.3 2.1 2.4 3.1	Low Density Residential Fire / Police / Municipal Offices Parks / Passive Recreation Farming / Forestry / Resource Preservation	Schools Religious Assembly Parks / Active Recreation Cell Towers	Med-High Density Residential Commercial Industrial Outdoor Amphitheaters / Sports Arenas Amusement Parks Hospitals / Assisted Living / Day Care
2.2 2.3	Commercial Industrial Parks / Recreation Municipal Services Farming / Forestry / Resource Preservation	Residential Schools Religious Assembly Hospitals / Assisted Living / Day Care Cell Towers	Outdoor Amphitheaters / Sports Arenas Amusement Parks
4.1	Residential Commercial Parks / Recreation Municipal Services	Schools Religious Assembly Hospitals / Assisted Living / Day Care	Industrial Outdoor Amphitheaters/ Sports Arenas Amusement Parks Cell Towers

* Land use impacts can be mitigated if sound attenuation, height limits, lighting controls, and/or special reviews are included.

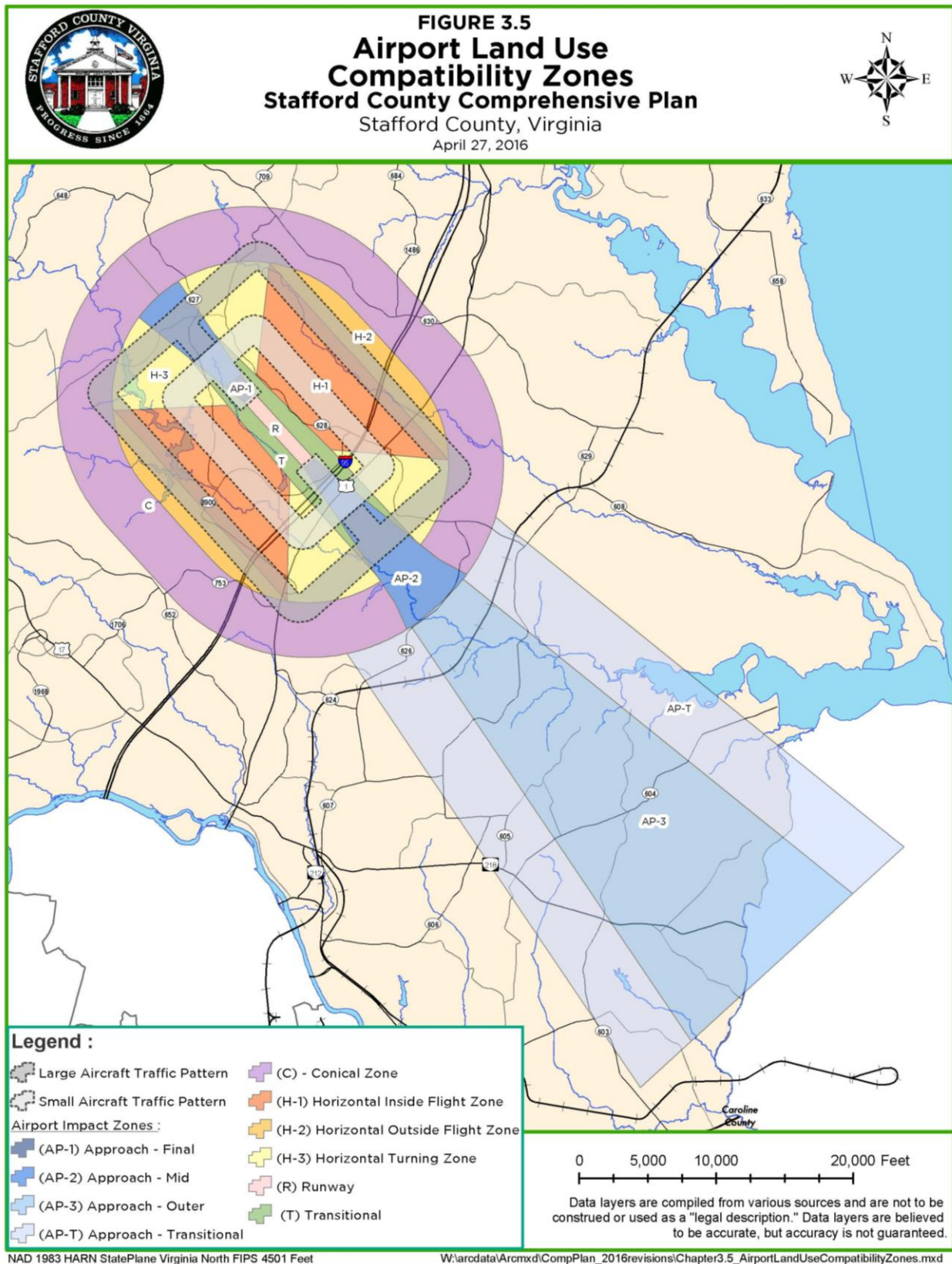
3.5 Airport Compatibility

The Stafford Regional Airport is located in center of the County on the west side of Interstate 95, between Ramoth Church Road and Mountain View Road. This is an area of the County that is anticipated to experience growth in the future. The area surrounding the Stafford Regional Airport was primarily agricultural and rural residential with very low density housing when it was initially sited in 1987. The growth pattern in the area has changed since that time with the construction of the Centerport Parkway in 2006 and amendments to the Future Land Use Plan in 2010 which allowed for the potential of higher density development. The Airport Master Plan anticipates the extension of the existing runway and an increase in operations. Objective 4.9 of this Plan is to: minimize the noise impacts and potential safety hazards generated by general aviation at public and private airfields in the County.

Stafford Regional Airport Land Use Compatibility Study

A Compatible Land Use Study “the Study” (see Appendix H) was prepared in 2014 as a joint effort between the Stafford Regional Airport Authority and Planning Commission to further define and address the specific planning considerations related to land use compatibility including potential impacts related to exposure to aircraft noise, land use safety with respect both to people on the ground and the occupants of aircraft; the protection of airport airspace; and general concerns related to aircraft overflights. The Study was based on industry standards and utilized the comprehensive Airport Cooperative Research Program Report sponsored by the Federal Aviation Administration (FAA) and model guidelines from other states and jurisdictions. The Study established: Impact Zones based on aircraft maneuvers around the airport; Goals and Policies; a Compatible Land Use Matrix; Additional Review Standards; and Implementation recommendations. The following pages include a map depicting the Airport Impact zones, definitions of each zone, and the Land Use Compatibility Matrix.

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Airport Impact Zone Definitions

The Airport Impact Zones designated in the Study and depicted in the previous map closely correspond with the existing Airport Impact Zoning Overlay District. The zones are utilized in establishing the corresponding land use compatibility standards. The following is a description of each zone.

Approach zones reflect the approach and departure areas for the runway and are divided into several sub areas.

Approach – Final, Runway Protection Zone (AP-1). The closest area at the end of each runway, beginning 200-feet from the end of each runway, extending approximately two thousand five hundred (2,500) feet to the east and one thousand seven hundred (1,700) feet to the west.

Approach – Mid (AP-2). The area that fans out from the Runway Protection Zone, extending fourteen thousand (14,000) feet to the east and ten thousand (10,000) feet to the west.

Approach – Outer (AP-3). The area that fans out to the east of the runway that extends from fourteen thousand (14,000) feet to fifty thousand (50,000) feet from the runway.

Approach – Transitional (AP-T). A 5,000 foot wide area extending along each side of the Outer Approach, beyond the Conical zone.

Transitional (T). The area that fans away perpendicular to any airport runway centerline and approach surfaces

Horizontal zones include the area that is established by swinging arcs of ten thousand (10,000) feet radii from the center of the end of the primary surface of an airport runway and connecting adjacent arcs by drawing lines tangent to those areas. The horizontal zone excludes the approach and transitional zones. The area is divided into two sub-areas for the purpose of land use compatibility.

Horizontal – Inside Flight Pattern (H-1). The inner portion of the Horizontal zone that encompasses the majority of the existing and future aircraft traffic patterns.

Horizontal – Outside Flight Pattern (H-2). The outer portion of the Horizontal Zone that encompasses the outer edge of the Jet/Turboprop (large) aircraft traffic patterns.

Horizontal – Turning Areas (H-3). The area of the Horizontal zone that encompasses the portion of the traffic pattern area where turning movements occur, where aircraft generate louder noise and there is increased accident probability.

Conical (C). The area that surrounds and commences at the periphery of the horizontal zone (10,000 feet from the Runway Clear Zone) and extends outward from there for a distance of four thousand (4,000) feet.

Compatible Land Use Recommendations

To support a future land use pattern that promotes safety and quality of life of the population around the airport and economic viability of the airport itself, the compatible land uses recommended in the Study have been incorporated into the Future Land Use recommendations in Section 3.6 of this Chapter.

These recommendations are not mandatory and do not take away the by-right zoning uses granted to property owners. The purpose is to serve as guidelines to inform decision makers when evaluating rezoning or conditional use permit requests of what uses might need additional review or considered incompatible.

Sub-areas of the affected land use districts are identified based on airport impact zones. Within each sub-area, the Plan identifies uses otherwise recommended in the land use district that would not be considered compatible or may require additional review to be considered compatible. Uses requiring additional review should comply with the recommendations provided in the Airport Compatible Land Use Study. Recommendations include site layout, use intensity, building material, and notification considerations.

TABLE 3.2: CONSOLIDATED LAND USE COMPATIBILITY MATRIX

ZONE CODE	AP-1	AP-2	AP-3	AP-T	T	H-1	H-2	H-3	C
ZONE DESCRIPTION	APPROACH - FINAL RUNWAY PROTECTION ZONE	APPROACH - MID -14,000' EAST -10,000' WEST	APPROACH - OUTER (EAST)	APPROACH - TRANSITIONAL	TRANSITIONAL ZONE	HORIZONTAL ZONE - INSIDE FLIGHT PATTERN	HORIZONTAL ZONE - OUTSIDE FLIGHT PATTERN	HORIZONTAL - TURNING ZONE	CONICAL ZONE
USES									
INSTITUTIONAL									
<i>Assembly</i> (schools, place of worship, daycare)	NC	NC	AR	C	NC	AR	AR	NC	C
<i>Hospitals</i>	NC	NC	AR	C	NC	AR	AR	NC	C
<i>Community</i> (Police, fire and rescue, neighborhood centers)	NC	AR	AR	C	AR	AR	C	AR	C
<i>Vertical Infrastructure</i> (Electric Transmission, Water Towers, Telecommunication Towers)	NC	NC	AR	AR	NC	AR	AR	AR	AR
RESIDENTIAL									
<i>Single-Family - Rural</i> (Maintain 3 acre density with min. lot size of 1 acre outside the USA, while inside the USA, lot sizes can be smaller than 1 acre if significant areas are retained for open space and the lowest density recommendations of the land use plan are not exceeded)	NC	AR	AR	C	NC	AR	AR	AR	C
<i>Single-family - Small Lot</i> (<1 acre) & <i>Townhomes</i>	NC	NC	AR	C	NC	AR ¹	AR ¹	NC	C
<i>Multi-Family</i> (Three or more units per building)	NC	NC	AR	C	NC	AR ¹	AR ¹	NC	C
<i>Group Living</i> (Nursing homes, group homes)	NC	NC	AR	C	NC	AR	AR	NC	C
<i>Transient Lodging</i>	NC	AR	C	C	NC	AR	AR	AR	C
COMMERCIAL (RETAIL/OFFICE)									
<i>General Retail & Service</i> (shopping centers & stores, restaurants, convenience, vehicle fueling)	NC	AR	C	C	AR	AR	C	AR	C
<i>Automobile related</i> (sales lot, repair, storage)	NC	C	C	C	AR	C	C	C	C
<i>Low-rise Office</i> (1-3 stories)	NC	AR	C	C	AR	AR	C	AR	C
<i>Mid/High-rise Office</i> (4+ stories)	NC	NC	AR	C	NC	AR	AR	NC	C
INDUSTRIAL									
<i>Light</i> (Light Manufacturing, Storage, Warehouse)	NC	AR	C	C	AR	AR	C	C	C
<i>Heavy</i> (Landfill, Heavy Manufacturing, bulk fuel storage, mining, uses that emit smoke or create sun glare)	NC	NC	NC	AR	NC	AR	AR	AR	AR

¹ Residential uses within zones H-1 and H-2 are discouraged. Individual projects may be considered appropriate if it is determined that it satisfactorily addresses the Additional Review factors highlighted in Table 2.

ZONE CODE	AP-1	AP-2	AP-3	AP-T	T	H-1	H-2	H-3	C
ZONE DESCRIPTION	APPROACH - FINAL RUNWAY PROTECTION ZONE	APPROACH - MID -14,000' EAST -10,000' WEST	APPROACH - OUTER (EAST)	APPROACH - TRANSITIONAL	TRANSITIONAL ZONE	HORIZONTAL ZONE - INSIDE FLIGHT PATTERN	HORIZONTAL ZONE - OUTSIDE FLIGHT PATTERN	HORIZONTAL - TURNING ZONE	CONICAL ZONE
USES									
RECREATION AND OPEN SPACE									
<i>Passive</i> (trails & natural areas)	NC	AR	C	C	NC	AR	C	AR	C
<i>Active</i> (community sports fields, golf, indoor facilities)	NC	AR	AR	C	NC	AR	C	AR	C
<i>Amusement</i> (Stadiums, amusement parks, fairgrounds)	NC	NC	AR	C	NC	AR	AR	NC	C
AGRICULTURAL									
<i>Grazing, Crops</i>	AR	AR	C	C	AR	AR	C	AR	C
<i>Processing</i> (Lumber mill, grain elevators and silos)	NC	NC	C	C	NC	AR	AR	AR	AR
OTHER									
<i>Aboveground storage tanks of fuel and flammable materials (except residential uses)</i>	NC	NC	NC	C	NC	NC	C	NC	C

Key: C = Compatible

AR = Additional Review – uses or activities that may be compatible with airport operations depending on their location and specifics of each project. Refer to design standards.

NC = Not Compatible – uses or activities that should not be permitted